

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) A method of identifying an agent suitable for altering mitochondrial function in a chondrocyte~~treating a cow suspected of being at risk for having osteoarthritis~~, comprising:

comparing the rate of ATP synthesis in one or more biological samples obtained from ~~the a~~ subject in the presence and absence of a candidate agent, wherein the biological sample comprises a chondrocyte, and wherein an altered rate of ATP synthesis indicates that the agent alters mitochondrial function; and therefrom determining the suitability of said candidate agent ~~for treating osteoarthritis~~ altering mitochondrial function in a chondrocyte.

4. (Currently Amended) A method of determining the suitability of an agent for altering mitochondrial function in a chondrocyte~~treating a cow suspected of being at risk for having osteoarthritis~~, comprising:

comparing the rate of ATP synthesis in a biological sample obtained from ~~the a~~ subject before and after administering to said subject a candidate agent, wherein the biological sample comprises a chondrocyte, and wherein an altered rate of ATP synthesis indicates that the agent alters mitochondrial function; and therefrom determining the suitability of said candidate agent ~~for treating osteoarthritis~~ altering mitochondrial function in a chondrocyte.

5-11. (Canceled)

12. (Currently Amended) The method of ~~claim 11~~ any one of claims 3 or 4 wherein the chondrocyte is an articular chondrocyte.

13-14. (Canceled)

15. (Currently Amended) The method of any one of claims 3-~~5~~or 4 wherein the biological sample comprises an articular chondrocyte and the step of comparing comprises comparing the rate of ATP synthesis in the absence and presence of transforming growth factor-beta.

16-112. (Canceled)